

Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

### **Exponential Functions and Transformations**

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The parent function is  $f(x) = 2^x$ . Describe each transformation in words.

a.  $f(x) = 2^x - 3$

b.  $f(x) = -2^x$

c.  $f(x) = 2^{-x}$

d.  $f(x) = 5 \cdot 2^{x-3}$

e.  $f(x) = 3 \cdot 2^x + 3$

f.  $f(x) = 2^{x+4} - 5$

Given the parent function  $f(x) = 1.5^x$ , write the transformation equation that would do the following:

a. Up 6 and left 2

b. Vertical stretch by 3 and reflection across x-axis

c. Down 5 and right 4

d. Reflection across vertical axis and up 1

Identify each function as linear, quadratic, or exponential

b.  $f(x) = 3x^2 + 4x + 7$

b.  $f(x) = 3(4.290)^{x+5}$

c.  $f(x) = 12.5x - 9.83$

d.  $f(x) = 38,390 - 93.39x^2$

e.  $f(x) = 2^x + 3$

f.  $f(x) = 2x + 3$